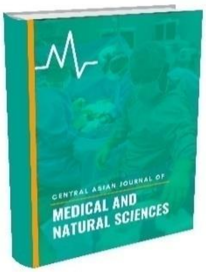
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Clinical and Immunologycal Aspecys of Leomioma with Endometritis

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Summary: The aim of work is to define a condition of system immunity at patients with a leomioma with endometritis, to develop algorithm of treatment and rehabilitation of reproductive health. Surgical treatment (myomectomy) is spent to 87 women. At patients were studied: condition of system immunity, a microbic landscape from uterine cervix, endometrium and knots of leomioma. Endometritis it is confirmed pathomorphologycal. Patients of reproductive age were divided into 2 groups: I: patients with a leomioma in a combination with endometritis (n=37), II - patients with a leomioma of a uterus without endometritis (n=35). As a result of researches the infection role in genesis of leomioma. Change of cellular immunity is realized in decrease in subpopulations T-cells (CD3 +, CD8 +, CD16 +). Complex treatment of the given patients allows with high efficiency (97 %) that is the extremely important for restoration and preservation of reproductive function.

Keywords: leomioma, endometritis, infection, immunity.

Introduction. Despite the large number of studies conducted in recent years, many questions of the etiology and pathogenesis of leomyoma still remain unclear [1,2,3]. In the last decade, the interests of researchers have been directed to the study of immunological aspects in the genesis of this pathology [18,20,22]. But this reflects only one side of the pathogenesis, since it is known that this disease is multifactorial [5,8,9]. Pathomorphology data show that leomyoma, endometrial hyperplasia, adenomyosis, as a rule, are accompanied by a chronic inflammatory process of the endometrium [6,7,10]. Endometritis (E) occupies an important place among inflammatory diseases of the female genital organs due to the severity and severity of both the immediate clinical manifestations and the consequences and complications associated with it [19,21]. The frequency of endometritis, according to different authors, varies widely - from 0.2 to 66.3%, averaging 14%. In recent years, there has been a tendency towards an increase in the frequency of this pathology, which is possibly associated with an increase in the number of abortions, various intrauterine manipulations [11,13,15]. A thorough morphological examination of the uterus affected by endomyometritis reveals the beginnings of leomyomatous nodes around the inflammatory foci [12,16,17].

The purpose of the study was to determine the state of systemic immunity in patients with leomyoma in combination with endometritis, in order to optimize the algorithm for the treatment and rehabilitation of reproductive health.

Materials and methods. In the gynecological department of the regional maternity hospital in Bukhara, which is the base of the Department of Obstetrics and Gynecology of the Bukhara Medical Institute 2019 to 2022. a study was conducted on 87 women of reproductive age with leomyoma. The patients underwent a comprehensive examination, including, in addition to general clinical examination, an ultrasound examination of the pelvic organs, a study of the main indicators of systemic immunity, and a bacteriological examination of discharge from the cervical canal. After that, the patients were divided into 2 groups: group I: patients with leomyoma in combination with E (47 women) aged 36.2 ± 0.8 years, group II - patients with leomyoma without E (40 people) aged 35.6±1.2 years. Subserous arrangement of leomyoma nodes with a diameter of 3 to 10 cm was observed in 12 patients from the first and 15 women and the second group, interstitial and interstitial-subserous arrangement of leomyomatous nodes with a diameter of 4 to 8 cm was observed in 25 patients from the first and in 20 women from the second group. Multiple lesions (from 3 to 5 nodes of leomyoma) were observed in 15 and 11 women of the respective groups. The control group (to compare immunological parameters) consisted of 30 healthy women. Statistical processing of the study results was carried out using STATISTICA 6.0 MedCalc Version 7.4.2.0 software. and Microsoft Excel.

Results and discussion. Diagnosis of endometritis was based on the detection of inflammatory infiltrates in endometrial tissues. The infiltrates consisted of lymphocytes with the presence of plasma cells, sometimes neutrophilic leukocytes. Fibrosis of the endometrial stroma was often present, with fusiform stromal elements arranged around small glands. A long-term chronic inflammatory process is usually associated with infection. Infectious pathogens capable of causing tumor growth are known: first of all, these are viruses and microorganisms capable of long-term persistence in the body. However, with a decrease in immunity, opportunistic microorganisms can also receive the opportunity to cause chronic inflammation. These include urogenital mycoplasmas: Mycoplasma hominis, Ureaplasma urealiticum. According to the results of the PCR test and culture study (> * 104) of the material from the cervical canal in patients of the first group, the following pathogens were identified: Chlamidia trachomatis in 2 patients (PCR only), Ureaplasma urealiticum in 26 (PCR) and 11 (cultural method), Mycoplasma hominis in 19 (PCR) and 24 (cultural method), the combination of Ureaplasma urealiticum and Mycoplasma hominis was detected in 5 women (PCR only), CMV and Herpes virus I-II were detected only by PCR in 2 and 3 patients, respectively, Gardnerella vaginalis isolated from 4 women by both PCR and culture method, Candida albicans was found in 17 (PCR) and 6 women (culture method). The number of lactobacilli in such patients was in the range of 103-105 tbsp. In the study of the endometrium, infectious agents were isolated in 28 people (75.6%). Among them, Ureaplasma urealiticum in 11 (PCR) and 5 (cultural method), Mycoplasma hominis in 12 (PCR) and 22 cases (cultural method), the combination of Ureaplasma urealiticum and Mycoplasma hominis was detected in 3 women (PCR only), Herpes virus I- II was detected by PCR in 2 patients, Gardnerella vaginalis was isolated in 2 women by both PCR and culture. In patients of the second group, the following were found in the cervical canal: Mycoplasma hominis in 6 (PCR) and 8 women (cultural method), Ureaplasma urealiticum in 3 (PCR) and 2 patients (cultural method), Candida albicans was found in 5 (PCR) and 4 women (cultural method). The number of lactobacilli in these patients was > 106 tbsp. In the study of the endometrium, no microorganisms were identified. Thus, the presence of mycoplasmas and gardnerella in the upper parts of the reproductive tract, accompanied by inflammation, allows us to consider them as active participants in the pathological process. Immunological studies were carried out in the immunodiagnostics laboratory of the Republican Scientific Center for Immunology of the Ministry of Health of the Republic of Uzbekistan (head of the laboratory, Doctor of Biological Sciences D.A. Musakhodjaeva). The following indicators were

studied: differentiation antigens of T-lymphocytes (CD3, CD4, CD8, CD8); differentiation antigens of B-lymphocytes (CD 20); NK cells (CD16); the content of serum immunoglobulins A, M, G; phagocytosis activity (monocytes, neutrophils), bactericidal activity, apoptosis marker CD95. One of the factors contributing to the penetration of opportunistic microorganisms can be systemic and local immunity. It is known that prolonged persistence of microorganisms can lead to their induction of autoimmune reactions in the body, the development of secondary immunodeficiencies and immunosuppression. When studying systemic immunity in women with leomyoma, a decrease in CD3, CD8, CD16 was revealed, in the first in the second groups, respectively, in comparison with the control group. Noteworthy is a group of women with leomyoma in combination with endometritis, in whom mutant strains of Mycoplasma hominis were isolated (n=12). In this group, there was a more pronounced inhibition of T- and B-cell immunity, a decrease in serum immunoglobulins of classes A and G, an increase in Ig M, bactericidal activity. The apoptosis marker CD95 was 2.4-3 times lower in women with leomyoma compared to the control group, which indicates inhibition of the processes of programmed cell death, which may be important in the development and progression of the disease. Thus, leomyoma should be considered as a pathological process that develops under the influence of many different factors, including conditionally pathogenic microflora of the genital tract. Before surgical treatment, after verification of concomitant endometritis, patients of the first group were given antibiotic therapy, taking into account the pathogenicity of the isolated microorganisms.

Table 1. Indicators of systemic immunity in the studied patients (M±m, abs.)

Indicators	Group I leomyoma in combination with ChE (n=37)	Group II "Pure" uterine leomyoma (n=35)	Leomyomas with detection of mutant strains of Mycoplasma hominis (n=12)	Control group (n=30)
Leukocytes 10h	5,7±0,4***	6,5 ±0,27	6,4 ±0,31	6,57 ±2,8
Lymphocytes 10h	1,67±0,09***	1,9 ±0,1*»	1,4 ±0,14	2,7 ±0,55
CD 3	1,2±0,08	1,4 ±0,08***	0,91 ±0,11	1,79 ±0,28
CD 20	0,2±0,02	0,2 ±0,02	0,11 ±0,02**	0,23 ±0,015
CD 4	0,8±0,07	0,8 ±0,05	0,71 ±0,09	0,96 ±0,09
CD 8	0,45±0,06	0,5 ±0,03	0,3 ±0,08	0,97 ±0,09
CD 16	0,18±0,02***	0,17 ±0,02***	0,14 ±0,01***	0,2 ±0,01
CD 95, %	1,3±0,1***	1,4 ±0,2***	0,8 ±0,2***	4,2 ±0,4
Ig A, г/л	1,5±0,1	2,1 ±0,1	1,5 ±0,2	1,86 ±0,99
Ig M, г/л	1,8±0,1	2,0 ±0,1*	2,73 ±0,3*	1,05 ±0,32
Ig G, г/л	11,9±0,9	11,7 ±0,7	8,3 ±0,93**	13,50 ±1,3

**-difference with the control group (p<0.05). **-difference with the control group (p<0.01).*

****-difference with the control group (p<0.001).*

Gradual therapy was used as a treatment method, namely: an antibiotic from the group of macrolides for intravenous administration by drip once a day for 3 days, then on the 7th and 14th days of treatment, once orally. At the same time, antimycotics and oral probiotics were used to restore normal vaginal microflora. Taking into account the results of the study of immunity, antibiotic therapy was combined with immunotropic therapy (inducers of endogenous interferon). A control study of the microflora of the lower genital tract (3 months after antibiotic therapy) in 97% of women showed the presence of lactobacilli in a titer of 106-109 CFU / ml. After a course of treatment with GnRH agonists, women received combined oral contraceptives (COCs) continuously for 6–10 months. In the future, women who did not want to have children in the near future for the prevention of leomyoma were installed with an intrauterine levonorgestrel-releasing system (n = 13), others continued to take

COCs (n = 31). Preconception preparation for pregnancy was received by 28 women, of whom pregnancy occurred in 21 patients. The rest of the women continue to prepare for pregnancy.

Conclusions

1. As a result of the study, the role of the infectious component in the pathogenesis of leomyoma was confirmed, which is confirmed by the data of pathomorphological studies of the endometrium and leomyoma nodes, the detection of opportunistic microorganisms, primarily Mycoplasma hominis.
2. The change in cellular immunity is realized in the reduction of subpopulations of T-lymphocytes (CD3+, CD8+, CD16+).
3. Optimized complex treatment of patients allows achieving good results with high efficiency, including the elimination of microbial pathogens (in 97% of cases), which is extremely important for the restoration and preservation of reproductive function

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